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Three new subterranean species of *Baezia* (Curculionidae, Molytinae) for the Canary Islands

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Abstract

The genus *Baezia* Alonso-Zarazaga & García, 1999 is endemic to the Canary Islands, where four species were known to date. Based on morphological evidence, three new species of *Baezia* are described in this study: *Baezia aranfaybo* García & López, **sp. nov.** from El Hierro island, and *Baezia madai* García & Oromí **sp. nov.** and *Baezia tizziri* García & Andújar, **sp. nov.** from La Palma island. Notes on their biology, habitat, and distribution are presented. The number of taxa in this endemic Canarian genus increases to seven eyeless species. One species has been reported from the soil (endogean environment), with the other six associated with caves and the mesovoid shallow substratum (hypogean or subterranean environment). Frequent association with the presence of roots suggests that species of *Baezia* may inhabit the continuum represented by the endogean and hypogean environments. Identification key to the seven species are provided.

Keywords

Canary Islands, Coleoptera, Curculionidae, identification key, lava tubes, mesovoid shallow substratum, new species

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Introduction

The volcanic terrains of the Canary Islands harbour a wide variety of subterranean environments (= hypogean *sensu* Giachino and Vailati 2010), most of them suitable for the establishment of fauna adapted to an underground lifestyle (Oromí 2004b). The small area of the Canary archipelago as a whole and its inherent fragmentation into islands had been considered a limiting factor for the establishment of a rich subterranean fauna (Leleup and Leleup 1970). However, these islands are rated as the richest volcanic region in troglobiont invertebrates worldwide, with more than 160 described species, followed by the Hawaiian Islands (80), Undara Cave in Australia (23), Azores (20), and Galapagos (14) (Peck and Finston 1993; Borges et al. 2012; Naranjo et al. 2020, and own unpublished data). Intensive systematic surveys of Canarian volcanic caves since the 1980's have greatly improved knowledge of the hypogean fauna of these islands (Oromí 2004a). In addition, in the last few years the number of known subterranean species has further increased in this archipelago due to studies on other non-cave subterranean environments, such as the **m**esovoid **s**hallow **s**ubstratum (henceforth referred as MSS; see Juberthie et al. 1980; Medina and Oromí 1990; Culver and Pipan 2009) and pyroclastic deposits (Oromí et al. 2018).

The richest group of Canarian troglobionts is Coleoptera, with 97 described and yet-undescribed species. Most of the subterranean beetle species are Curculionidae Latreille, 1802 (38% according to Oromí et al., in press). All Canarian weevils belonging to the tribe Typoderini Voss, 1965 in the subfamily Molytinae Schoenherr, 1823 have a subterranean lifestyle, and are classified into three genera: the non-endemic genus *Styphloderes* Wollaston, 1873, and the Canarian endemic genera *Oromia* Alonso-Zarazaga, 1987 and *Baezia* Alonso-Zarazaga & García, 1999. The genus *Styphloderes* is widely distributed in the Mediterranean and Macaronesian regions and is represented in the Canary Islands by the microphthalmic and endogean species *S. lindbergi* Roudier, 1963. *Baezia* and *Oromia* are Canarian endemic genera, with eyeless species living in lava tubes and the MSS, except for *Baezia litoralis* Alonso-Zarazaga & García, 1999, found under stones partly embedded in the soil in Tenerife (García et al. 2007). The genus *Baezia* is closely related to *Oromia* (Alonso-Zarazaga & García, 1999), however they are easy to be distinguished mainly because *Baezia* has: a smaller body size (2.5–3.8 mm) (4–6.4 in *Oromia*); a shorter and more robust rostrum (larger and narrower in *Oromia*); a rostrum dorsally strongly striated (dorsally strongly punctated in *Oromia*); a pronotum without longitudinal keels or with only a slight median keel (with obvious median and/or lateral longitudinal keels in *Oromia*); abdominal sternites I and II (hidden under metacoxae) not united to the metaventrite and the elytra (they are united to the metaventrite and the elytra in *Oromia*); metapleurosternal suture absent (present in *Oromia*).

The genus *Baezia* includes four species to date: *B. bimbache* García & López, 2007 (Fig. 1A) from El Hierro, *B. martini* García, 2002 (Fig. 1B) and *B. vulcania* Alonso-Zarazaga & García, 2002 (Fig. 1C) from La Palma, and *B. litoralis* (Fig. 1D) from Tenerife. All species of *Baezia* are probably rhizophagous, since in lava tubes they have been usually found on or inside roots hanging from the roof or lying on the ground.

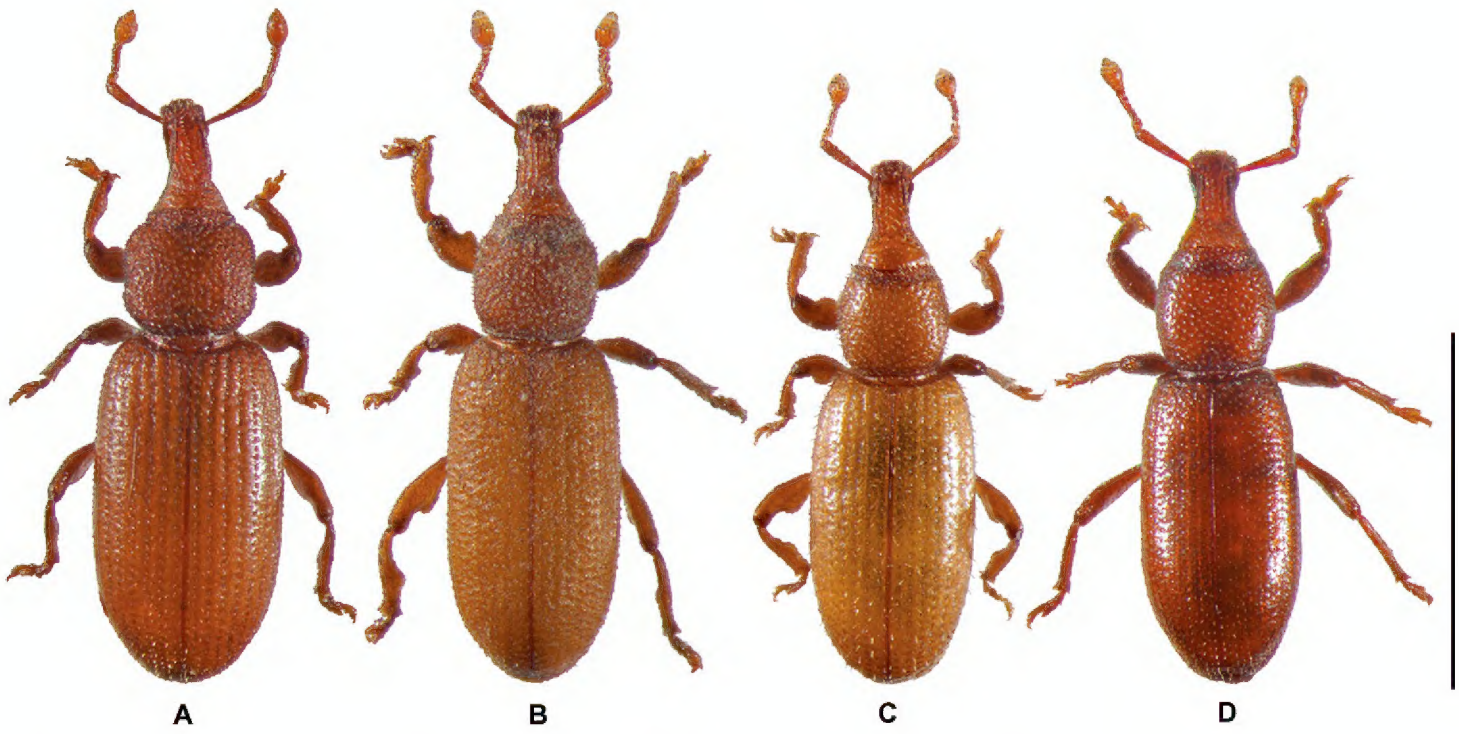

Figure 1. Dorsal habitus of **A** *Baezia bimbache* **B** *B. martini* **C** *B. vulcania* and **D** *B. litoralis*. Scale bar: 2 mm.

The presence of *Baezia* is frequently associated with the occurrence of roots in subterranean environments, suggesting that species of *Baezia* may inhabit in the continuum represented by the endogean and hypogean environments.

Our prospections since 2006 in lava tubes and MSS on El Hierro and La Palma have provided several individuals of two unknown *Baezia* species. Furthermore, on revising the Coleoptera collected in 1986 in a cave on La Palma, we detected one specimen of another unknown *Baezia* species. The purpose of the present paper is to describe these three new species and provide morphological identification keys to all seven known species of the genus.

Material and methods

Sampling and imaging

The specimens of these new species were collected using different methods. Specimens of *Baezia aranfaybo* sp. nov. from El Hierro emerged in the laboratory from dead roots collected in a cave during two different visits, and remains of six individuals were recently obtained by washing soil samples from inside the same cave. The single specimen of *Baezia madai* sp. nov. from La Palma was collected in a volcanic cave with pitfall traps baited with blue cheese, whereas those of *Baezia tizziri* sp. nov. derive from the MSS (mesovoid shallow substratum) on La Palma using subterranean traps similar to those designed by López and Oromí (2010). Despite of the intensification of samplings throughout the last decade to obtain a larger number of specimens, the results have been negative. The low number of available specimens does not compromise the

taxonomic validity of the new species, as there are clear morphological differences between these new species themselves, and with their already known congeneric species.

Soil residues adhering to the individuals were removed with a fine paintbrush and warm water with a little dish-washing liquid. Type specimens of *B. bimbache*, *B. vulcania*, *B. martini* and *B. litoralis* from the authors' collections were used for comparative morphological analysis. Examination, dissection, measurements, and drawings were completed with a Carl Zeiss Citoval 2 stereomicroscope fitted with an ocular micrometre. Photographs were taken under magnification using a Canon Powershot A650 attached to a Zeiss Stemi 2000 stereomicroscope or a Canon EOS 6D digital camera equipped with macro-lens MPE65. Photographs were processed with the program Zerene Stacker (V. 1.04, Zerene Systems, LLC., Richland, WA), combining them into a single image using pmax and dmap methods. The software Photoshop was used for final retouching.

Depositories

The material examined is deposited in the following collections:

DZUL Entomological collection of the Department of Animal Biology (Zoology), University of La Laguna, Tenerife, Canary Islands, Spain;

IPNA-CSIC Invertebrates collection of the Institute of Natural Products and Agrobiology (IPNA-CSIC), Tenerife, Canary Islands, Spain;

RGB Personal collection of Rafael García Becerra, La Palma, Canary Islands, Spain.

Results

Taxonomic acts

Class Insecta Linnaeus, 1758
Order Coleoptera Linnaeus, 1758
Superfamily Curculionoidea Latreille, 1802
Family Curculionidae Latreille, 1802
Subfamily Molytinae Schoenherr, 1823
Tribe Typoderini Voss, 1965
Genus *Baezia* Alonso-Zarazaga & García, 1999

***Baezia aranfaybo* García & López, sp. nov.**
http://zoobank.org/F66E1C68-E6F8-4A5D-A5CB-CA2FB98838C8
Figs 2A–H, 5I, J

Type locality. Spain, Canary Islands, El Hierro, Frontera: Cueva de Longueras (27°44'46.03"N, 18°1'32.04"W, 470 m a.s.l.).

Type material. ***Holotype*:** 1♂, El Hierro, Frontera, Cueva de Longueras (27°44'46.03"N, 18°1'32.04"W, 470 m a.s.l.), emerged from roots, 9 February 2011, code H680, H. López leg. (DZUL). ***Paratypes*:** same locality as for the holotype, 1♀, emerged from roots, 20 October 2006, P. Oromí leg. (IPNA-CSIC); 1♀, 20 August 2007, code H681, H. López leg. (RGB).

Other material. same locality as the holotype, remains of six individuals, washing samples of soil from inside the cave, 4 February 2020, H. López leg. (IPNA-CSIC).

Description. Male. Total length (including rostrum) 3.5 mm, 2.7 mm without rostrum and head, and maximum width 1.1 mm. Body bright reddish-brown (Fig. 2A); apex of rostrum, antennae and legs covered with scattered yellow-testaceous erect setae, and pronotum and elytra with short fine testaceous pilosity denser and aligned on whole surface. Apterous.

Head partially retracted into pronotum, microreticulated with abundant irregular punctation, lacking eyes.

Rostrum robust, similar in both sexes, widest at antennal insertion, 2.04× as long as wide at scrobes level, 0.75× as long as pronotum. In lateral view lower margin concave, and upper margin slightly convex, more declivous near apex; apex smooth, shiny, with testaceous erect setae. Scrobes deep, their apical third visible from above. Mandibles smooth and black. Rostrum slightly more depressed than forehead, with dorsal surface irregular with longitudinal sulci separated by fine keels; ventral surface smooth.

Antennae. Scapes straight, increasingly widened towards ¼ of apex, 6.5× as long as its maximum width and 1.4× as long as funicule, covered with small erect setae. First funicular antennomere conical, 2.25× as long as wide, as long as next four antennomeres together; 2nd to 7th funicular antennomeres obconical, transverse. Club oval, 1.78× as long as wide and 1.3× as long as the last six funicular antennomeres.

Pronotum isodiametric with slight median keel, sides somewhat convex, constricted behind apex, with a slight sinuation at middle, anterior margin 0.93× as wide as posterior (Fig. 5J). Surface smooth and shiny, with traces of microreticulation around well-defined punctures; setae decumbent and scattered, little more erect towards edges.

Scutellum small, triangular.

Pterothorax with elytra elongate, lacking humeral calli; 2.6× as long as pronotum and 1.86× as long as wide, base wider than base of pronotum; maximum width at middle, basal margin 0.64× that width. Surface smooth and shiny; interstriae smooth; striae very fine, slightly defined by aligned punctures coinciding with small, erect setae. In lateral view, apical declivity somewhat pronounced, slightly projecting in peak.

Abdomen with integument surface shiny, slightly microreticulate; with fine, short setose pilosity; well-defined punctures separated by a distance of 0.6× to 1.0× of their diameter. First and second ventrites with wide median depression (as in all Typoderini); remaining ones slightly convex, a little but increasingly elevated towards apex, suddenly cut down at end, giving stair-like appearance. Ventrite 5 2.6× as wide as long, with strong punctation.

Legs moderately elongate, with shiny surface, microreticulate with abundant semierect setae. Procoxae separated by distance of 0.25× of their diameter. Mesocoxae separated by distance of 0.75× of their diameter. Femora slightly dilated at middle,

Figure 2. *Baezia aranfaybo* sp. nov. **A** dorsal habitus **B, C** aedeagus in dorsal and lateral view **D** *Spiculum gastrale* **E** tegmen **F** *Spiculum ventrale* **G** ovipositor **H** spermatheca.

strongly narrowed towards apex (Fig. 5I); pro-, meso- and metafemora 3.1×, 3.3× and 4.9× respectively as long as their maximum width. Pro- and mesotibiae straight, external edge slightly convex, with weak internal apical sinuation; metatibiae slightly concave on external edge (Fig. 5I); tibiae uncinate, apex with spiny short comb; pro-, meso- and metatibiae 5.37×, 5.7× and 6.25× respectively as long as their maximum width (excluding uncus). Protarsi with tarsomeres I 1.5×, II 0.8×, III 0.6× and V 3.3× respectively as long as wide, tarsomeres III clearly bilobed, onychium bearing two free simple claws; tarsal brushes with long sparse hyaline hairs.

Aedeagus. Median lobe dorsally almost symmetrical, with slightly convex sides and rounded apex (Fig. 2B); clearly curved in lateral view, with acute apex (Fig. 2C). Internal sac with abundant, densely arranged teeth and spicules in two elongated groups. *Spiculum gastrale* robust and bowed with highly asymmetric arms (Fig. 2D). Tegmen with short manubrium; quite wide, with two small transparent ovals and hairy parameroid lobes separated by a notch (Fig. 2E).

Female. Similar to male with slight sexual dimorphism. Total length 3.1 mm, maximum width 0.9 mm. Elytra 2.45× as long as pronotum, 1.74× longer than wide. 5th ventrite 1.9× as wide as long. Pro-, meso- and metafemora respectively 3.4×, 3.1× and 3.8× as long as wide. Pro-, meso- and metatibiae respectively 5.9×, 6.3× and 6.8× as long as wide.

Spiculum ventrale bearing about 16 macrosetae (Fig. 2F); manubrium with short median arm forking into two longer arms forming an acute angle. Ovipositor with free conical apical styles, bearing 7–8 apical macrochaetae; coxite with numerous sensilia (Fig. 2G); spermatheca with ramus and collum not developed, and hook shaped cornu (Fig. 2H).

Differential diagnosis. This new species is morphologically close to its allopatric species *Baezia bimbache* García & López, 2007, also from El Hierro. However, *B. aranfaybo* can be differentiated by its larger size and brighter body surface, proportionally longer antennae, longer scapes increasingly widened towards a ¼ of the apex, and the isodiametric pronotum (slightly transverse in *B. bimbache*). In addition, its elytra are proportionally longer with a pronounced apical declivity slightly projecting in peak in lateral view. The femora and tibiae are proportionally longer with less pronounced dilations on inner sides. Median lobe of the aedeagus with dorsally slightly convex sides (slightly diverging in *B. bimbache*) and rounded apex (slightly acute in *B. bimbache*), and less concave in lateral profile. In females, the *spiculum ventrale* has a larger manubrium and arms, these latter forming an acute angle (obtuse in *B. bimbache*).

Etymology. Specific name in apposition of Aranfaybo, considered by the Bimbaches (aboriginal people of El Hierro) as a sacred animal that lived in the cave Asteheyta (in the locality of Tacuytunta). This animal, with a pig-like appearance, was invoked as a magical intermediary to attract rains (Abreu 1848).

Habitat and distribution. This new species lives in Cueva de Longueras, a lava tube discovered in the 1980's on the northern slope of El Hierro island. It is located in a moderately old lava flow covered by thermo-sclerophyllous vegetation, which is partially degraded by long-abandoned agricultural activity in the locality. Despite its relatively short length (300 m), it offers good conditions for the subterranean fauna

due to its high humidity and stable low temperature during the whole year, as well as roots hanging from the ceiling at several cave parts (Oromí et al. 2001). The cave-adapted fauna found in this cave is composed of the pseudoscorpion *Paraliochthonius martini* Mahnert, 1989, an undescribed spider species probably of the genus *Robertus* (C. Ribera, pers. comm.), an undescribed species of the planthopper genus *Cixius*, the thread-legged bug *Collartida anophthalma* Español & Ribes, 1983, the cockroach *Loboptera ombriosa* Martín & Izquierdo, 1987, the rove beetle *Alevonota hierroensis* Assing & Wunderle, 2008, and the ground beetle *Trechus minioculatus* Machado, 1987. In the last 15 years, the cave has been visited and sampled with pitfall traps several times but no additional specimens of *B. aranfaybo* were collected. The three so far known specimens emerged from dead roots collected on three occasions, and stored in glass recipients in dark conditions. In 2020, we found the remains of six individuals by washing soil collected from the vicinity of roots inside the cave. Therefore, within the cave, this subterranean weevil seems to live associated with patches of roots that penetrate downwards from above-ground vegetation.

Baezia madai **García & Oromí, sp. nov.**

http://zoobank.org/C1BDDC6F-6737-407B-88FC-D76E45875C59

Figs 3A–E, 5E, F

Type locality. Spain, Canary Islands, La Palma, El Paso: Cueva de Las Tijaraferas, also named Cueva de Barros (28°39'43.89"N, 17°53'23.97"W, 536 m a.s.l.).

Type material. ***Holotype*****:** 1♂, La Palma, El Paso, Cueva de Las Tijaraferas, also named Cueva de Barros (28°39'43.89"N, 17°53'23.97"W, 536 m a.s.l.), 10 July 1986, J.L. Martín leg. (DZUL).

Description. Male. Total length (including rostrum) 2.5 mm, 1.9 mm without rostrum and head, and maximum width 0.95 mm. Body matte reddish-brown (Fig. 3A); apex of rostrum, antennae and legs covered with scattered yellow-testaceous erect setae, pronotum and elytra with short fine testaceous and claviform pilosity denser and aligned on whole surface. Apterous.

Head partially retracted into pronotum, microreticulated with abundant irregular punctation, lacking eyes.

Rostrum robust, widest at antennal insertion, 2× as long as wide at scrobes level, 0.63× as long as pronotum. In lateral view lower margin concave, upper margin slightly convex, more declivous near apex; apex punctated, shiny, with erect setae. Scrobes deep, their apical third visible from above. Mandibles smooth and black. Rostrum slightly more depressed than forehead, with dorsal surface irregular with longitudinal sulci separated by five fine broken keels; ventral surface rough.

Antennae. Scapes straight, increasingly widened from middle, 5.6× as long as its maximum width. The specimen lacks the rest of the antennae.

Pronotum slightly elongated with fine median keel, maximum width towards middle and sides slightly convex, constricted behind apex, with a slight sinuation at

middle; anterior margin as wide as posterior one (Fig. 5F). Surface matte chagrinated with microreticulation; punctures obvious, almost coalescent, setae lying down and scattered, little more erect towards margins.

Scutellum very small, triangular.

Pterothorax with elytra elongate, lacking humeral calli; 2.6× as long as pronotum, 1.84× as long as wide, base wider than base of pronotum; maximum width towards middle, basal margin 0.68× that width. Surface matte, chagrinated, strongly microreticulated; interstriae smooth; striae very fine, slightly defined by aligned punctures coinciding with small, erect setae.

Abdomen with integument surface slightly shiny, microreticulated; with fine, short setose pilosity; well-defined punctation. First and second ventrites with wide median depression; remaining ones slightly convex, a little but increasingly elevated towards apex, suddenly cut down at end, giving stair-like appearance. Ventrite 5 2.4 × as wide as long, strongly chagrinated, with deep punctation.

Legs elongate, with matte surface, microreticulate with abundant semierect setae. Procoxae separated by distance of 0.16× of their diameter. Mesocoxae separated by distance of 0.71× of their diameter, and metacoxae 1.63× of their diameter. Femora slightly dilated at middle, from middle they gradually narrow until they strangle near apex (Fig. 5E); pro-, meso- and metafemora 3.6×, 4× and 4.8× respectively as long as their maximum width. Tibiae straight, external edge slightly convex; internally with weak apical sinuosity and small bump towards middle (Fig. 5E); tibiae uncinate, with uncus provided of a sharp tip; pro-, meso- and metatibiae 4.75×, 4.75× and 6.66× respectively as long as their maximum width (excluding uncus). Protarsi with tarsomeres I 1.67×, II 0.76×, III 0.87× and V 2.5× as long as wide respectively, third one clearly bilobed, fifth bearing two free simple acute claws; tarsal sole brushes with long sparse hyaline hairs.

Aedeagus. Median lobe almost symmetrical in dorsal view, sides slightly convex, apex rounded (Fig. 3B); clearly curved in lateral view, with acute apex (Fig. 3C). Internal sac with abundant teeth and spicules arranged in two elongated groups, with large acute teeth mixed with others smaller and with asperities; three basal sclerotized pieces. *Spiculum gastrale* robust and bowed with highly asymmetric arms (Fig. 3D). Tegmen with short manubrium; wide, hairy parameroids forming lobes, separated by a deep wide notch slightly more than half its length (Fig. 3E).

Female. Unknown.

Differential diagnosis. This new species is morphologically close to *B. vulcania.* However, *B. madai* can be differentiated by its smaller size, matte body surface and lesser and shorter pilosity; scape longer and increasingly widened towards middle; elongated pronotum, with sides almost straight (slightly convex in *B. vulcania*) and with a weak median keel (absent in *B. vulcania*). In addition, its elytra are proportionally longer, the femora and tibiae less dilated on inner side, the tibiae proportionally longer; the median lobe dorsally parallel-sided (sides gently rounded in *B. vulcania*) and acute apex (rounded and slightly prominent at middle in *B. vulcania*), with straighter profile, and the temones proportionally longer.

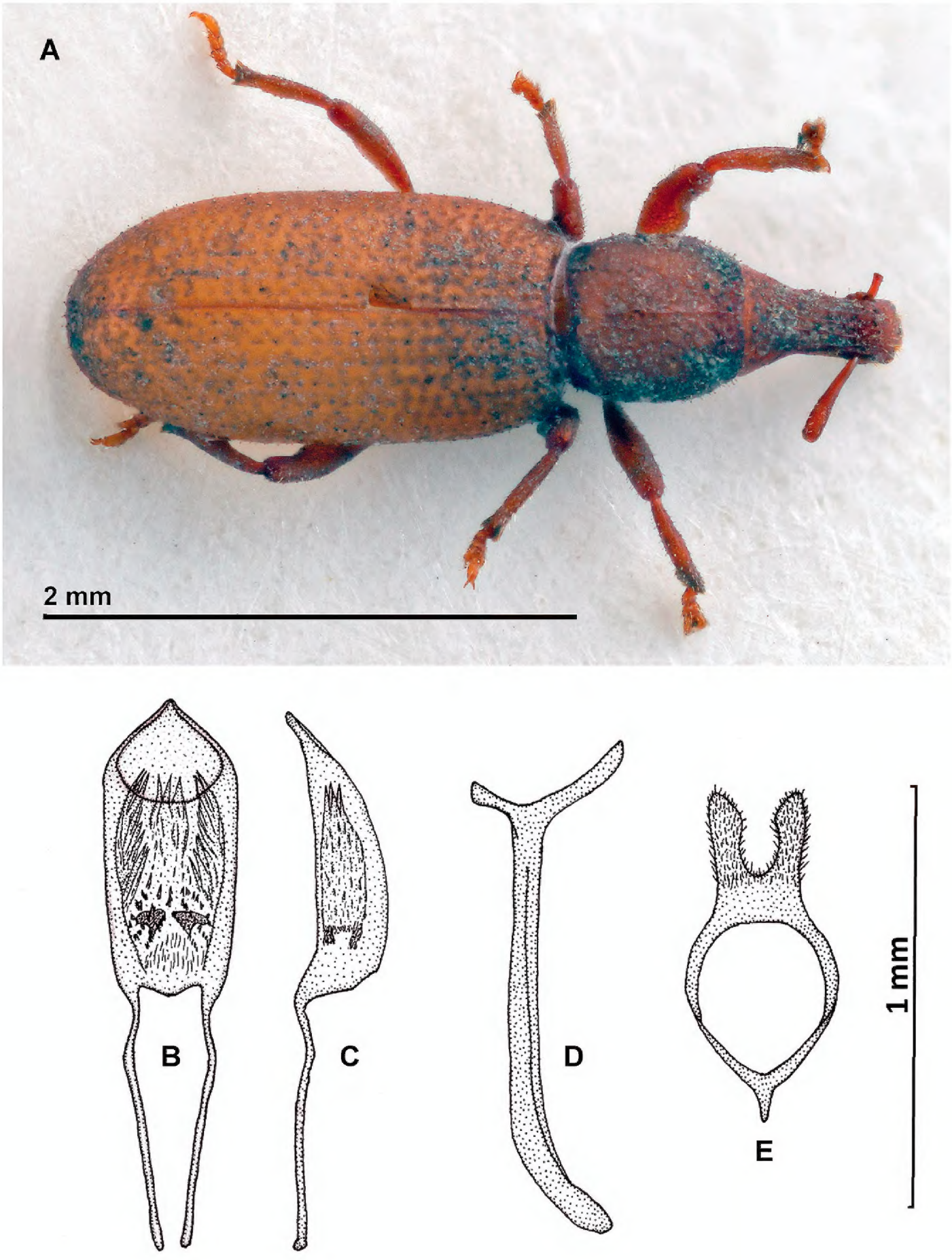

Figure 3. *Baezia madai* sp. nov. **A** dorsal habitus **B, C** aedeagus in dorsal and lateral view **D** *Spiculum gastrale* **E** tegmen.

Etymology. Specific name in apposition of Madai, a Guanche (Tenerife aboriginal) word meaning "deep" (Álvarez 1991), alluding to the habitat of this species.

Habitat and distribution. *Baezia madai* has only been collected in Cueva de Las Tijaraferas lava tube, despite systematic biospeleological surveys conducted in other

caves of the same area for many years (e.g. Fernández et al. 2007). The cave is located in the wall of a small ravine, in a place where the potential vegetation is thermo-sclerophyllous, but partially degraded and nowadays mainly replaced by *Amygdalus communis*, *Opuntia* sp., *Euphorbia lamarckii* and *Rumex lunaria*. In addition to its biological interest, this cave (only 63 m in length) holds many archaeological remains (pottery, bones, shells, etc.) that attest to its use as home by the prehispanic inhabitants of the island, the Auaritas. Inside this cave, there are several sections with high environmental humidity, roots hanging from the ceiling and walls, and soil covered with fine sediments. These points in the cave are the most suitable for underground fauna. Besides *Baezia madai* sp. nov., the presence of other troglobitic species has been confirmed, such as the sandhopper *Palmorchestia hypogaea* Stock & Martín, 1988, the cockroach *Loboptera teneguia* Izquierdo & Martín, 1999, and the ground beetles *Licinopsis angustula* Machado, 1987 and *Thalassophilus subterraneus* Machado, 1990. During the last decade, the authors have sampled the cave several times with pitfall traps and collected dead roots to remove weevil individuals from them, but without obtaining additional material beyond the only known specimen.

Baezia tizziri **García & Andújar sp. nov.**
http://zoobank.org/2FFAF945-071B-4EA5-BB0F-824BBB9C7FE4
Figs 4A–E, 5G, H

Type locality. Spain, Canary Islands, La Palma, Garafía: MSS Barranco de los Hombres (28°49'33.57"N, 17°52'07.95"W, 249 m a.s.l.).

Type material. ***Holotype*****:** 1♂, La Palma, Garafía: MSS Barranco de los Hombres (28°49'33.57"N, 17°52'07.95"W, 249 m a.s.l.), 20 September 2017, R. García leg. (DZUL). ***Paratypes*****:** same locality as the holotype, 1♂, 18 November 2020, R. García leg. (IPNA-CSIC).

Other material. Spain, Canary Islands, La Palma, Garafía, Cueva de La Fajana de Franceses (28°49'57.07"N, 17°51'56.89"W, 120 m s.n.m.), 23 January 2002, remains of elytra, R. García leg. (RGB).

Description. Male. Total length (including rostrum) 3.7 mm, 3 mm without rostrum and head, and maximum width 1.1 mm. Body matte reddish-brown (Fig. 4A); apex of rostrum, antennae and legs covered with scattered yellow-testaceous erect setae, and pronotum and elytra with short fine testaceous pilosity denser and aligned on the whole surface. Apterous.

Head partially retracted into pronotum, microreticulated with abundant irregular punctation, lacking eyes.

Rostrum robust, widest at antennal insertion, 2.08× as long as wide at scrobes level, 0.73× as long as pronotum. In lateral view lower margin concave, and upper margin slightly convex, more declivous near apex; apex smooth, shiny, with erect setae. Scrobes deep, their apical third visible from above. Mandibles smooth and black. Rostrum slightly more depressed than forehead, with dorsal surface irregular with longitudinal sulci separated by five fine keels; ventral surface smooth.

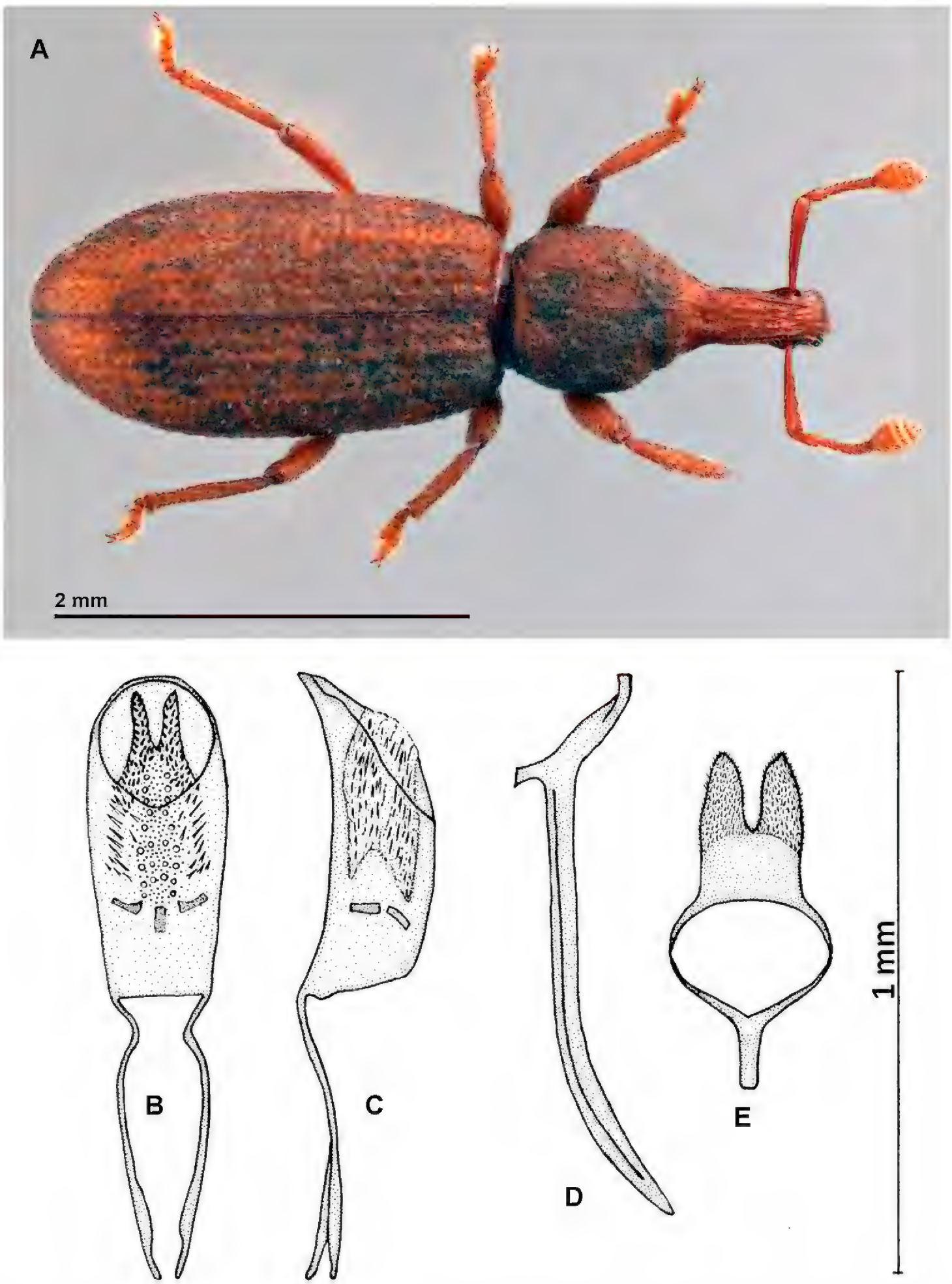

Figure 4. *Baezia tizziri* sp. nov. **A** dorsal habitus **B, C** aedeagus in dorsal and lateral view **D** *Spiculum gastrale* **E** tegmen.

Antennae. Scapes straight, increasingly widened towards ¼ of apex, 9.7× as long as its maximum width and 1.3× as long as funicule, covered with small erect setae. First funicular antennomere conical, 2× as long as wide, as long as next three antennomeres

together; 2nd to 7th funicular antennomeres obconical, transverse. Club oval, 1.6× as long as wide and 1.3× as long as the last six funicular antennomeres.

Pronotum slightly elongated with weak median keel, maximum width in the middle and sides somewhat convex, constricted behind apex, anterior margin 0.96× as wide as posterior (Fig. 5H). Surface matte chagrinated with microreticulation; punctures obvious, setae lying down and scattered, little more erect towards margins.

Scutellum very small, triangular.

Pterothorax with elytra elongate, lacking humeral calli; 2.4× as long as pronotum, 1.98× as long as wide, base wider than base of pronotum; maximum width in the middle, basal margin 0.63× that width. Surface matte, chagrinated, strongly microreticulated; interstriae smooth; striae very fine, weakly defined by aligned punctures coinciding with small, erect setae.

Abdomen with integument surface shiny, slightly chagrinated, microreticulated; with fine, short setose pilosity; no apparent punctation. First and second visible ventrites 1 and 2 with wide median depression; remaining ones slightly convex, elevated towards apex, giving stair-like appearance. Ventrite 5 2.1× as wide as long, strongly chagrinated.

Legs elongate, with matte surface, microreticulate with abundant semierect setae. Procoxae separated by distance of 0.11× of their diameter. Mesocoxae separated by distance of 0.62× of their diameter, and metacoxae 1.9× of their diameter. Femora not specially dilated at middle (Fig. 5G); pro-, meso- and metafemora respectively 3.6×, 3.5× and 5× as long as their maximum width. Tibiae straight (Fig. 5G); pro- and mesotibiae with external edge slightly convex, internally with a slight apical sinuation, and internal edge sinuate towards middle; metatibiae slightly concave on apical external edge, apical internal edge slightly denticulated; tibiae uncinate, uncus with wide blunt tip; pro-, meso- and metatibiae respectively 5×, 5.3× and 6.65× as long as their maximum width (excluding uncus). Protarsi with tarsomeres I 1.2×, II 0.66×, III 0.66× and V 2.5× as long as wide respectively, third clearly bilobed, fifth bearing two free simple blunt claws; tarsal sole brushes with long sparse hyaline hairs.

Aedeagus. Median lobe dorsally almost symmetrical, with sides slightly convex, apex acute (Fig. 4B); clearly curved in lateral view, with acute apex (Fig. 4C). Internal sac with abundant teeth and spicules arranged in three elongated groups, with big acute teeth mixed with others smaller and with asperities; two basal sclerotized pieces. *Spiculum gastrale* robust and bowed with highly asymmetric arms (Fig. 4D). Tegmen with short manubrium; wide, hairy parameroid lobes, separated by a deep fine notch almost than half its length (Fig. 4E).

Female. Unknown.

Differential diagnosis. This new species is morphologically close to *B. martini*. However, *B. tizziri* can be differentiated by its larger size and matter body surface (shinier and with larger and more abundant scales in *B. martini*); antennae proportionally longer, scapes longer and thickening to 1/4 of apex (thickening uniformly towards apex in *B. martini*); pronotum moderately elongated with slight median keel (transverse and without median keel in *B. martini*); elytra proportionally longer;

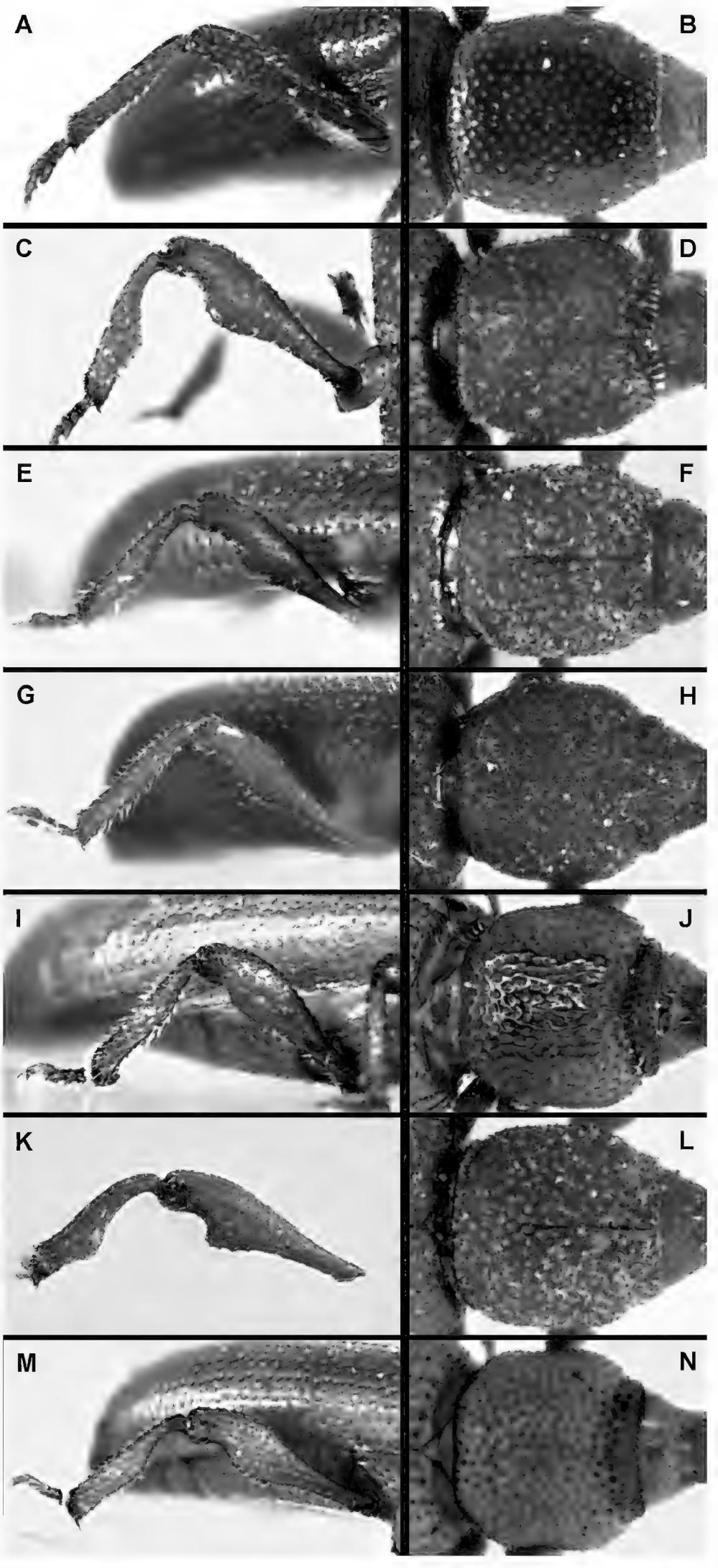

Figure 5. Hind leg and pronotum of **A, B** *Baezia litoralis* **C, D** *B. vulcania* **E, F** *B. madai* sp. nov. **G, H** *B. tizziri* sp. nov. **I, J** *B. aranfaybo* sp. nov. **K, L** *B. martini* **M, N** *B. bimbache*.

femora and tibiae proportionally longer and barely dilated on inner side (more dilated on inner side in *B. martini*); the penis, dorsally with slightly convex sides (almost straight in *B. martini*) and more rounded apex, more curved profile, and temones proportionally longer.

Note. the known specimens have blunt, thickened and blackened claws as well as uncus. These characteristics are not present in any other *Baezia* species.

Etymology. Specific name in apposition of Tizziri, Guanche (Tenerife aboriginal) word meaning "ray of light", related to the belief in your surroundings making you feel good and sleepy.

Habitat and distribution. The existence of this new species has been known since 2002 from the remains of elytra found in La Fajana de Franceses Cave. During the last 15 years, this and other caves in the same area have been actively studied with pitfall traps and by collecting dead roots, failing to obtain new individuals of this species. However, the two fresh specimens known of *B. tizziri* were collected in a close locality of the North of the island, in the MSS of the ravine Barranco de los Hombres, using subterranean traps similar to those designed by López and Oromí (2010). The ravine has well-preserved thermo-sclerophyllous vegetation, dominated by species including *Hypericum canariense*, *Apollonias barbujana* and *Bosea yervamora*, with some sparse exotic trees like *Persea americana*. In these traps, other subterranean species have been collected besides *B. tizziri*: the ground beetle *Licinopsis angustula*, the rove beetle *Domene benahoarensis* Oromí & Martín, 1990, and unidentified specimens of the cockroach genus *Loboptera* and the rove beetle genus *Medon*.

Key to the species of *Baezia*

1 Inner side of metafemora and metatibiae not dilated at middle (Fig. 5A, G)....**2**

– Inner side of metafemora and metatibiae dilated at middle (Fig. 5C, E, I, K, M) **3**

2 Pronotum not constricted at apex (Fig. 5B) ..... ***B. litoralis*** **(Tenerife)**

– Pronotum constricted at apex (Fig. 5H)..... ***B. tizziri*** **sp. nov. (La Palma)**

3 Setae of pronotum with clavate or flaming apex..... **4**

– Setae of pronotum with acute apex **5**

4 Pronotum transverse (Fig. 5D), shiny and with punctures separated by the distance of their diameter. Pilosity length 0.05 mm ..... ***B. vulcania*** **(La Palma)**

– Pronotum elongated (Fig. 5F), matte and with larger and almost coalescent punctation. Pilosity length 0.025 mm, less abundant..... ..... ***B. madai*** **sp. nov. (La Palma)**

5 Pronotum subquadrate, sides converging to the posterior margin (not clearly parallel-sided) (Fig. 5J). Metafemora and metatibiae slightly dilated (Fig. 5I).... ..... ***B. aranfaybo*** **sp. nov. (El Hierro)**

– Pronotum subquadrate, straight sides and almost parallel-sided. Metafemora and metatibiae strongly dilated **6**

6 Inner side of metafemora strongly dilated and very suddenly narrowed at apical third (Fig. 5K). Pronotum as long as wide (Fig. 5L). Integuments very microreticulated and chagrinated. *Spiculum ventrale* of females with a large manubrium, forking at the end with inverted T-shaped arms ..... ***B. martini* (La Palma)**

– Inner side of metafemora dilated but not suddenly narrowed (Fig. 5M). Pronotum transverse (Fig. 5N). Integuments shiny. *Spiculum ventrale* of females with a manubrium forking directly from the plate into two arms with inverted V–shaped ..... ***B. bimbache* (El Hierro)**

Concluding remarks

The differences suggested by Alonso-Zarazaga and García (1999) to diferenciate *Baezia* and *Oromia* have been clear until now to assign them to two independient genera. However, the new species described during last years (Machado and López 2015; García et al. 2020; present work) show that some morphological characters have a wider variability than initially observed. The female spiculum ventrale is an example of this morphological variability, since the shape of manubrium and its arms show different morphologies which are present in both genera. The *Baezia* species from El Hierro have a manubrium forking into two arms directly from the plate, or after a short median arm, being these morphologies shared with the different *Oromia* species. Similar situations are present in other morphological structures, but their taxonomical importance is not clear and difficult to evaluate at the moment. Further ongoing studies, including molecular genetic data, will help to clarify the nature of this variation, testing whether the biological entities diagnosable by fixed genetic differences are coincident with the current taxonomy, and exploring phylogenetic relationships to understand the patterns of morphological differenciation.

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